

Abstract of the Disclosure

A method of forming an H_2 passivation layer in an FeRAM includes preparing a silicon substrate; depositing a layer of TiO_x thin film, where $0 < x < 2$, on a damascene structure; plasma space etching of the Ti or TiO_x thin film to form a TiO_x sidewall; annealing the TiO_x side
5 wall thin film to form a TiO_2 thin film; depositing a layer of ferroelectric material; and metallizing the structure to form a FeRAM.